a computer is made to execute the step of detecting unit accounting amount data which represents an amount of said accounting unit for the object data which has been separated from said contents, and

prices are charged for the use of said object data within the limits of the amount indicated by said payment data, based on said unit price data contained in said charging data which has been read out and on the unit accounting amount data which has been detected in said charging step.

19. (Amended) The computer program product according to Claim 17, wherein said charging data recorded on said recording medium further contains unit price data representing an accounting unit for the use of said object data and a price corresponding to an accounting unit as well as accounting range data which represents the range of one billing, and

a computer is made to execute the step of detecting unit accounting amount data which represents an amount of said accounting unit for the object data which has been separated from said contents, and

a price is charged each time for the use of said object data within the limits of the amount indicated by said payment data, based on said unit price data contained in said charging data which has been read out and on the unit accounting amount data which has been detected.

REMARKS

This AMENDMENT UNDER 37 C.F.R. § 1.111 is filed in reply to the outstanding Office Action of June 6, 2002, and is believed to be fully responsive thereto for reasons set forth below in greater detail.

Responsive to paragraph 2 of the Office Action, it is noted that an Information Disclosure Statement was filed in this application. A computer generated English translation of each of the references 11 and 12 cited in the previous Information Disclosure Statement is forwarded herewith.

Responsive to paragraph 3, claims 1-19 have been reviewed in particular and revised to provide proper antecedent basis for the terms therein to comply with 35 U.S.C. § 112 and to clarify the subject matter of the claims.

In the Office Action, the Examiner also asked that the specification he checked for minor errors, and the opportunity is being taken to correct a minor informality on Page 5, care being taken to avoid adding new matter.

In the Official Action:

claims 1, 3-9 and 10-12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Akiyama et al. (U.S. 5,737,415A), with reference in particular to col. 8, line 15 to col. 9, line 35; and

claims 2 and 13-19 stand rejected under 35 U.C.C. § 102(a) as being anticipated by Saito (U.S. 6,002,772A), with reference in particular to col. 5, lines 35-50.

Reconsideration is respectfully requested of the rejection of the claims herein, particularly in view of the clarifying amendments to claims 1-19 and the following analyses of the Akiyama et al. and Saito references and the distinctions of the present invention thereover.

Akiyama et al. U.S. 5,737,415

Referring to col. 8, line 15 to col. 9, line 35, referred to by the Examiner, data are shipped from a shipping center such as a control center to a distribution channel with encrypted data stored in a CD-ROM.

The end user goes to a shop 27 and buys the CD-ROM as a data storage medium 101. At the same time, the end user buys a data management module 102 made in card form as an SD card.

Software data stored in the CD-ROM are all encrypted, and when decoding and reproducing these it is essential to use the SD card as the data management module 102 to ensure security. Also, the SD card is equipped with a fee collecting system based on the amount of data to be used.

When wishing to reproduce data stored in the CD-ROM (101) by the end users own data reproducing device 105, the end user must first insert the SD card (102) into a card drive device 28 and load the CD-ROM (101) on the data reproducing device 105.

The end user transmits a request for using the desired software data to the control center 31 by a modem incorporated in the data reproducing device 105. In turn, the control center 31 will send data made by the encrypting authorization commands (key data) to the user's data reproducing device 105.

The data reproducing device 105 which has received the authorization commands will read the CD-ROM 101 and sequentially decode the necessary data through the decoding potion 103 of the SD card.

At the same time, the control CPU 4 will count the amount of decoded data or the time required for decoding and subtract a value corresponding to the software ID from the

charge data storage portion 8. Then, until the time when the balance thereof becomes "0", decoding of the encrypted data will be continued.

When the balance value of the charge data storage portion becomes "0", outputting of the decoded data is terminated.

The control center 31 will, in accordance with the charging value balance data received from the data reproducing device 105, accept fees corresponding to the used amount from the end user's account at a financial institution 32 and send them to the account of the data provider.

Thus, according to the present invention, since not only data stored in a CD-ROM but also user data generated by operating the data are output to the outside after being encrypted, it is possible to prevent illegal use of data performed by changing the user data.

In summary, in this patent, charge data storage only contains the account balance as a result of charging the account. The particular calculation method is not disclosed explicitly therein at all.

Storing only an account balance in a storage is a widely used method in the prior art. In contrast thereto, in the present patent application, a recording medium also contains a unit charging price, a charging type and so on for several different types of subject data.

Then the charging logic calculates dynamically the price of the service charge applied to the data based on the stored information in the recording medium.

This patent discloses broadly imposing a charge for the use of data. In the subject patent application, the service of embedded/retrieving/detecting a digital water mark is changed and its price is dynamically calculated.

Saito U.S. 6,002,772

As explained in col. 5, lines 14-49, which are partially referenced by the Examiner, to prevent piracy or leakage of data content, a cryptography technique and an electronic watermark technique are combined. In a data content supplied to a first user, a first user is entered as an electronic watermark by a data management center, and the data content with an electronic watermark entered in its encrypted using a crypt key and is supplied.

In case the data content is copied and transferred to a second user, a user data of the second user is entered as electronic watermark, and a scenario to enter the user data of the second user as electronic watermark is registered at the data management center, and the data content with electronic watermark entered in it is encrypted using another crypt key and is supplied.

In the data content obtained by the first user, the first user data is entered as an electronic watermark by a data center. If the data content is copied and transferred without taking a normal procedure, the data center verifies the electronic watermark entered there, and it is possible to detect that the first user has copied and transferred the data content without taking a normal procedure.

When it is copied and transferred by a normal procedure, an electronic watermark of each user is entered, and this makes it possible to clearly define the route of copying and transfer. When copying and transfer are repeated, noise in the data content is increased by the entered electronic watermark, and this makes it possible to exclude and inhibit copying and transfer.

In summary, Saito discloses entering an electronic (digital) watermark in data content, but does not disclose or teach charging for embedding/retrieving a digital watermark to/from data content.

In contrast thereto, the present invention discloses and claims a charging method for the service of embedding/retrieving/detecting a digital watermark by dynamically calculating a charge based on varied types of charging information stored in a recording medium, not the entering of an electronic digital watermark as in Saito.

The prior art, thus, fails to disclose or suggest the principal of writing and using the combination of charging data and recognition data in the manner described in independent Claims 1, 2, 3, 10 and 13. Specifically, Claim 1 sets forth the limitations of recording charging data to charge for object data that is recognized by the use of the recognition data. Claim 2 is directed to a content generator and sets forth the limitations of recording charging data, for charging for object data, and recognition data for recognizing that object data. The prior art does not teach or render obvious this principal of this invention.

Claim 3 is directed to a data charging apparatus in a data charging system and sets forth limitations analogous to the above-limitations of Claim 1. Claim 10 is directed to a data charging method and Claim 13 is directed to a computer program for executing steps set forth in Claim 10, and both Claims 10 and 13 include limitations analogous to those discussed above in connection with Claim 1.

The above-discussed feature of the present invention is of utility because, as explained in detail in the present application, it may be used to provide a system and method of charging a user for his/her use of digital contents in an easy and reliable manner.

Because of the above-discussed differences between Claims 1, 2, 3, 10 and 13 and the prior art, and because of the advantages associated with those differences, these claims patentably distinguish over the prior art and are allowable. Claims 4-9 are dependent from Claim 3 and are allowable therewith. Similarly, Claims 11 and 12 are dependent from Claim 10 and are allowable therewith, and Claims 14-19 are dependent from, and are allowable with, Claim 13. The Examiner is, accordingly, requested to reconsider and to withdraw the rejections of Claims 1-19 under 35 U.S.C. §102, and to allow these claims.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

This application is now believed to be in condition for allowance, and a Notice of Allowance is respectfully requested. If the Examiner believes a telephone conference might expedite prosecution of this case, it is respectfully requested that he call applicant's attorney at (516) 742-4343.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please replace the paragraph on Page 5, line 24 and 25 with the following:

--Figure 5 shows the charging data recorded on the IC card shown in Figure [1] 2;

IN THE CLAIMS:

Claim 1 has been amended as follows:

1. (Amended) A data charging system comprising:

a content generator for generating contents containing object data,

a recording medium for recording [the] charging data used for charging for said object data and [the] recognition data used for recognition of the object data, and

a data charging apparatus for charging for the use of said object data by using said charging data and said recognition data which have been recorded;

wherein said data charging apparatus comprises:

data reading logic for reading out said recognition data and said charging data from said recording medium,

a separator for separating said object data from said contents,

a [an] recognition logic for recognizing said separated object data by using said recognition data which has been read out,

an accounting logic for charging for the use of said recognized object data by using said charging data which has been read out, and

a writing logic for writing, as said charging data, the results of charging for the use of said recognized object data into said recording medium.

Claim 2 has been amended as follows:

2. (Amended) A content generator for embedding digital watermarks in object data and generating contents in a data charging system which records, on a recording medium, [the] charging data used for charging for object data contained in said contents and [the] recognition data used for recognizing the object data and charges only for the use of the object data embedded with said digital watermarks by using said charging data and said recognition data which have been recorded.

Claim 3 has been amended as follows:

3. (Amended) In a data charging system which records, on a recording medium, [the] charging data used for charging for object data contained in [said] contents and [the] recognition data used for recognizing the object data and charges for the use of said object data by using said charging data and said recognition data which has been recorded,

a data charging apparatus comprising:

a data reading logic for reading said recognition data and said charging data from said recording medium,

a separator for separating said object data from said contents,

a [an] recognition logic for recognizing said separated object data by using said recognition data read out,

an accounting logic for charging for the use of said recognized object data by using said charging data which has been read out, and

a writing logic for writing, as said charging data, the results of charging for the use of said recognized object data into said recording medium.

Claim 4 has been amended as follows:

4. (Amended) The data charging apparatus according to Claim 3, wherein said contents comprise said object data and said recognition data for recognizing this object data,

said separator separates said object data and said recognition data from said contents,

said recognition logic recognizes said object data, based on said recognition data which has been separated from said contents and on said recognition data which has been read out from said recording medium, and

said accounting logic charges for said object data by using said charging data which has been read out.

Claim 5 has been amended as follows:

5. (Amended) The data charging apparatus according to Claim 3, further comprising a watermarking logic for embedding digital watermarks in said object data which has been separated from said contents, wherein said separator separates said object data and said recognition data from said contents,

said recognition logic recognizes said object data, based on said recognition data which has been separated from said contents and on said recognition data which has been read out from said recording medium, and

said accounting logic charges for said object data embedded with said digital watermarks.

Claim 6 has been amended as follows:

6. (Amended) The data charging apparatus according to Claim 3, wherein a digital watermark is embedded in said object data in said contents,

said data charging apparatus further comprising a means for detecting if said object data is embedded with said digital watermark,

said separator separating said object data and said recognition data from said contents,

said recognition logic recognizing said object data, based on said recognition data which has been separated from said contents and on said recognition data which has been read out from said recording medium, and

said accounting logic charging for said object data only if said object data is found to be embedded with said digital watermark.

Claim 7 has been amended as follows:

7. (Amended) The data charging apparatus according to Claim 3, wherein said charging data recorded on said recording medium contains at least payment data which indicates [the] payment made in advance for the use of said object data, and

said accounting logic charges for the use of said object data within [the] limits of [the] an amount indicated by said payment data contained in said charging data.

Claim 8 has been amended as follows:

8. (Amended) The data charging apparatus according to Claim 7, wherein said charging data recorded on said recording medium further contains unit price data representing [the] an accounting unit for the use of said object data and [the] a price corresponding to the accounting unit,

said data charging apparatus comprising an accounting unit detection logic for detecting unit accounting amount data which represents an [the] amount of said accounting unit for the object data which has been separated from said contents,

said accounting logic charging within the limits of the amount indicated by said payment data, based on said unit price data contained in said charging data which has been read out and on the unit accounting amount data which has been detected.

Claim 9 has been amended as follows:

9. (Amended) The data charging apparatus according to Claim 7, wherein said charging data recorded on said recording medium further contains unit price data representing [the] an accounting unit for the use of said object data and [the] a price corresponding to the accounting unit as well as accounting range data which represents the range of one billing,

said data charging apparatus comprising an accounting unit detection logic for detecting unit accounting amount data which represents an [the] amount of said accounting unit for the object data which has been separated from said contents, wherein

said accounting logic charging each time within the limits of the amount indicated by said payment data, based on said unit price data contained in said charging data which has been read out and on the unit accounting amount data which has been detected.

Claim 10 has been amended as follows:

10. (Amended) A data charging method for generating contents which contain object data and recognition data used for the recognition of this object data, recording [the] charging data used for charging for said object data and the recognition data used for recognition of the object data, and charging for the use of said object data by using said charging data and said recognition data which have been recorded, comprising the steps of:

reading said recognition data and said charging data from said recording medium,

separating said object data from said contents,

recognizing said separated object data by using said recognition data which has been read out,

charging for the use of said recognized object data by using said charging data which has been read out; and

writing, as said charging data, the results of charging for the use of said recognized object data into said recording medium.

Claim 11 has been amended as follows:

11. (Amended) A data charging method according to Claim 10, wherein said object data in said contents are embedded with digital watermarks, comprising the steps of:

separating said object data and said recognition data from said contents;

recognizing said object data, based on said recognition data which has been separated from said contents and on said recognition data which has been read out from said recording medium;

detecting said digital watermark embedded in said object data; and

charging for said recognized object data only by using said charging data which has been read out if said object data is found to be embedded with said digital watermark.

Claim 12 has been amended as follows:

12. (Amended) A data charging method according to Claim 10, comprising the steps of:

separating said object data and said recognition data from said contents;

recognizing said object data, based on said recognition data which has been separated from said contents and on said recognition data which has been read out from said recording medium;

embedding digital watermarks in said separated object data; and

charging for the use of the object data embedded with said digital watermarks by using said charging data which has been read out.

Claim 13 has been amended as follows:

13. (Amended) In a data charging apparatus of a data charging system which records, on a recording medium, [the] charging data used for charging for [the] object data contained in contents and [the] recognition data used for recognition of the object data, and charges for the use of said object data by using said charging data and said recognition data which have been recorded;

a computer program product enabling a computer to execute the steps of:

reading said recognition data and said charging data from the recording medium,

separating said object data from said contents,

recognizing said separated object data by using said recognition data which has been read out,

charging for the use of said recognized object data by using said charging data which has been read out, and

writing, as said charging data, the results of charging for the use of said recognized object data into said recording medium.

Claim 14 has been amended as follows:

14. (Amended) The computer program product according to Claim 13, wherein said contents contain said object data and said recognition data used for recognition of the object data,

said object data and said recognition data are separated from said contents in said separation step,

said object data is recognized in said recognition step, based on said recognition data which has been separated from said contents and on said recognition data which has been read out from the recording medium, and

a charge is made for said object data in said charging step by using said charging data which has been read out.

Claim 15 has been amended as follows:

15. (Amended) The computer program product according to Claim 13, wherein the computer is made to execute the step of embedding digital watermarks in said object data which has been separated from said contents,

said object data and said recognition data are separated from said contents in said separation step,

said object data is recognized in said recognition step, based on said recognition data which has been separated from said contents and on said recognition data which has been read out from the recording medium, and

a charge is made for said object data embedded with said digital watermarks in said charging step.

Claim 16 has been amended as follows:

16. (Amended) The computer program product according to Claim 13, wherein said object data in said contents are embedded with digital watermarks,

the computer is further made to execute the step of detecting that said object data is embedded with said digital watermarks,

said object data and said recognition data are separated from said contents in said separation step,

said object data is recognized in said recognition step, based on said recognition data which has been separated from said contents and on said recognition data which has been read out from the recording medium, and

a charge is made for said object data in said charging step only if said object data is found to be embedded with said digital watermark.

Claim 17 has been amended as follows:

17. (Amended) The computer program product according to Claim 13, wherein said charging data recorded on said recording medium contains at least payment data which indicates a [the] payment made in advance for the use of said object data, and

prices are charged in said charging step for the use of said object data within [the] limits of an [the] amount indicated by said payment data contained in said charging data.

Claim 18 has been amended as follows:

18. (Amended) The computer program product according to Claim 17, wherein said charging data recorded on said recording medium further contains unit price data representing an [the] accounting unit for the use of said object data and a [the] price corresponding to the accounting unit, and

a computer is made to execute the step of detecting unit accounting amount data which represents an [the] amount of said accounting unit for the object data which has been separated from said contents, and

prices are charged for the use of said object data within the limits of the amount indicated by said payment data, based on said unit price data contained in said charging data which has been read out and on the unit accounting amount data which has been detected in said charging step.

Claim 19 has been amended as follows:

19. (Amended) The computer program product according to Claim 17, wherein said charging data recorded on said recording medium further contains unit price data representing an [the] accounting unit for the use of said object data and a [the] price

corresponding to an [the] accounting unit as well as accounting range data which represents the range of one billing, and

a computer is made to execute the step of detecting unit accounting amount data which represents an [the] amount of said accounting unit for the object data which has been separated from said contents, and

a price is charged each time for the use of said object data within the limits of the amount indicated by said payment data, based on said unit price data contained in said charging data which has been read out and on the unit accounting amount data which has been detected.